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Motivations to initiate injectable hydromorphone and diacetylmorphine treatment: A qualitative study of patient experiences in Vancouver, Canada

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Abstract

Background: Within the context of the ongoing overdose crisis and limitations of conventional opioid treatments, the scale-up of injectable hydromorphone (HDM) and diacetylmorphine (DAM) as evidenced-based treatments is currently underway in some settings in Canada. Past research has underscored the importance of treatment initiation in shaping onward treatment trajectories, however structural factors that influence participants motivations to access injectable HDM or DAM have not been fully characterized. This study examines peoples' motivations for accessing HDM/DAM treatment and situates these within the social and structural context that shapes treatment delivery by employing the concept of structural vulnerability.

Methods: Fifty-two individuals enrolled in injectable HDM/DAM programs were recruited from four community-based clinical programs in Vancouver, Canada to participate in qualitative semi-structured interviews. Approximately 50 hours of ethnographic fieldwork was also completed in

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one clinical setting, and one-on-one with participants public spaces. Interview transcripts and ethnographic fieldnotes were analyzed through a structural vulnerability lens with a focus on treatment initiation.

Results: Participants' previous experiences and perceptions of other drug treatments (e.g. methadone) foregrounded their initiation of injectable HDM/DAM. Social and structural factors (e.g. fentanyl-adulterated drug supply, poverty, drug criminalization) influenced participants' motivations to address immediate physical risks and their initial perception of this treatment's ability to align with their opioid use experiences. Similar social and structural factors that drive immediate physical risks, were also evidenced in participants' motivations to make changes in their daily lives and to address broader opioid use goals.

Conclusion: Participants descriptions of their motivations to initiate HDM/DAM highlight how structural vulnerabilities shaped participants' experiences initiating injectable HDM/DAM.

Keywords

Opioid use disorder; qualitative research; addiction treatment; Harm Reduction

1.0 Introduction

North America is in the midst of a devastating overdose crisis (Dart, et al., 2015), fuelled largely by the proliferation of fentanyl and fentanyl-adulterated opioids (Ciccarone, 2017). In the United States, 67, 367 people died from overdose in 2018, and synthetic opioids were involved in 67% of deaths (Centers for Disease Control and Prevention, 2019). In Canada, more than 15, 393 apparent opioid-related deaths occurred between January 2016 and December 2019, with 77% in 2019 involving fentanyl (Government of Canada, 2020a). The scale-up of opioid treatments has been identified as an urgent public health priority amidst this crisis (Government of Canada, 2020b). While this has primarily involved the expansion of oral medications for people diagnosed with opioid use disorder (MOUD) (e.g., methadone/Methadose, buprenorphine/naloxone), there has also been increased attention to the role of injectable hydromorphone (HDM) and diacetylmorphine (DAM) as treatment options in Canada and in the United States (Canadian Research Initiative in Substance Misuse [CRISM], 2019a; Fairbairn, et al., 2019; Kilmer, 2018; Maghsoudi, Bowles, & Werb, 2020).

Injectable HDM/DAM is now recommended in Canada as part of a stepped and integrated continuum of care which progresses in treatment intensity from oral to injectable medications (CRISM, 2019a). Despite growing availability of oral MOUD, implementation gaps still exist across the cascade of treatment with regards to retention and treatment stabilization (Socías, et al., 2020; Socías, et al., 2018). Understanding how injectable HDM/DAM impacts treatment uptake and retention when offered as part of a continuum of care has not been fully explored. Further, implementation and scale-up of this treatment is currently underway in some Canadian settings in the context of the fentanyl-driven overdose crisis. Understanding ways to improve implementation of injectable HDM/DAM within the cascade of care remains an important focus in understanding the role of treatment interventions in reducing overdose deaths (Nolan, et al., 2015; Sordo, et al., 2017).

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Previous research has underscored how experiences initiating MOUD plays an important role in treatment engagement. While notably DAM and HDM have high retention rates (Oviedo-Joekes, et al., 2016; Oviedo-Joekes, et al., 2019), treatment initiation remains a critical point in treatment engagement that is not well-understood in relation to these treatment options. Research on first-line oral MOUD has highlighted how treatment initiation is associated with specific demographic characteristics and social-structural exposures, including older age (Fairbairn, et al., 2012; Lloyd, et al., 2005), having been incarcerated, homeless, or unstably housed (Reynoso-Vallejo, Chassler, Witas, & Lundgren, 2008; Schütz, Rapiti, Vlahov, & Anthony, 1994), living with HIV (Kerr, Marsh, Li, Montaner, & Wood, 2005; Zule & Desmond, 2000), and a having a history of adverse childhood experiences (Moran, Keenan, & Elmusharaf, 2018). Factors associated with treatment initiation also include drug use patterns, including frequency of drug injection, (Reynoso-Vallejo, et al., 2008; Zule & Desmond, 2000) and overdose experiences (Kerr, et al., 2005) as well as prior drug treatment experiences (Schütz, et al., 1994; Zule & Desmond, 2000).

Further research on oral MOUD initiation has found that willingness to join treatment programs is influenced by a desire to reduce drug use and improve health (Tompkins, Neale, & Strang, 2019), an interest in joining treatment to alleviate the financial burden associated with drug use (Booth, Corsi, & Mikulich, 2003) and a desire to change social networks, improve employment status, avoid involvement in criminalized activities (Stöver, 2011) and police interactions (Ghaddar, Khandaqji, & Abbass, 2018). Willingness to enrol in treatment has also been found to be related to the perceived treatment effectiveness (Booth, et al., 2003; Tompkins, et al., 2019; Zule & Desmond, 2000). Clinical trial data on injectable DAM note that the most frequently cited reasons for participating in this type of treatment included, “free heroin”, “reduced impact of heroin” and “limit illegal activity” (Nosyk, Geller, et al., 2010). These motivations signified the opportunity for participants to introduce stability and “get their lives back” (Oviedo-Joekes, et al., 2014).

Other studies have drawn attention to how initiation experiences structure treatment engagement. For example, pre-existing views regarding treatment prior to enrollment have been shown to predict early treatment termination (Kayman, Goldstein, Deren, & Rosenblum, 2006). Further, coercive practices that leverage patients’ vulnerability during crisis initiation experiences can lead to negative treatment perceptions and early treatment discontinuation (Damon, et al., 2017). Therefore, understanding the factors that impact treatment initiation is important in developing a robust understanding of treatment implementation. Herein, we examine peoples’ motivations to access HDM/DAM treatment and situate these motivations within the social and structural context that shape treatment delivery by employing a structural vulnerability lens.

2.0 Structural Vulnerability and Drug Treatment

Structural vulnerability is an outcome of social positioning – that is, the ways in which positioning within social hierarchies and diverse networks of power influence peoples’ vulnerability to physical and emotional suffering (Quesada, Hart, & Bourgois, 2011). It is related to the concept of structural violence, which has highlighted socially structured

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patterns of distress and disease across population groups (Farmer, 1996), but extends the concept through increased attentiveness to how social discrimination (e.g., racism, sexism) are implicated in the production of inequitable outcomes (Quesada, et al., 2011). Rather, structural vulnerability draws attention to how social structures and discrimination limit life options and decision-making to frame choices (Rhodes, et al., 2012) and how these are differentially produced across groups. Agency, in this way, is conceived as the ongoing and reciprocal action through which people's agency is shaped by their structural vulnerability and, in turn, produced and reproduced through practices (Rhodes, et al., 2012).

While structural vulnerability is often examined in relation to social and political structures, it can also be instructive in examining how these are implicated in clinical encounters and can be a productive lens for contextualising and informing clinical practice (Quesada, et al., 2011). By applying this lens to examine people's motivations in accessing injectable HDM/DAM, we can work towards understanding how these are shaped by the social conditions that constrain and enable agency and how this treatment is embedded within wider medical and political contexts. This approach facilitates a consideration of not simply individual decision making, but rather situates people's motivations to access treatment within the social, cultural and policy trends that construct what this treatment is and who this treatment is for. In this way structural vulnerability sheds light on the alignment of individual treatment goals with the treatment model and illuminates what sorts of behavior or actions are deemed appropriate and which ones are possible (Leatherman, 2005) when accessing injectable HDM/DAM.

3.0 Context: Injectable HDM and DAM in Vancouver

Health Canada has announced changes to expand access to DAM and HDM as (Maghsoudi, et al., 2020), and national clinical practice guidelines for this treatment were released in September 2019 (CRISM, 2019a). However, access to injectable DAM is limited to Crosstown Clinic in Vancouver, Canada. Access to treatment in this setting stems from the advocacy efforts of SNAP (SALOME/NAOMI Association of Patients), Pivot Legal Society, Providence Health Care Society and some of the SALOME team (Boyd & Norton, 2019). While DAM can be prescribed by physician and nurse practitioners in Canada, it can only be accessed through Health Canada's Special Access Programme or inclusion on the list of drugs for urgent public health need (Health Canada, 2016; Priest, et al., 2019) and is highly regulated with rules governing importation, compounding and storage (British Columbia Centre on Substance Use and B.C. Ministry of Health, 2017; Priest, et al., 2019). Conversely, the regulatory framework for providing HDM is far less complicated, and as a result HDM is more broadly available in comparison to DAM (Priest, et al., 2019).

In Canada, DAM and HDM is limited to a small number of individual providers, and the highest coverage of providers is in Vancouver (Maghsoudi, et al., 2020). As of March 2019, there were 322 active patients enrolled in this treatment (Eydt, et al., 2020). During our study period, five service provider programs offered HDM in the province of BC, four of which were located in Vancouver (Eydt, et al., 2020). Large numbers of people are on waitlist for access to these limited programs (Maghsoudi, et al., 2020). In September 2018, Crosstown Clinic had a waitlist of 345 patients (Eydt, et al., 2020).

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National clinical practice guidelines recommend that injectable HDM or DAM be provided for individuals who have previous experience with therapeutic dose of oral MOUD while continuing to experience significant health and social consequences or other circumstances and risks that indicate the individual may benefit from this treatment (CRISM, 2019a). This eligibility criteria recommends: confirmed and documented history of injection drug use with opioids, severe opioid use disorder (DSM-5 criteria), current injection drug use and capacity to consent to treatment (CRISM, 2019a). While not a strict pre-requisite for enrollment, injectable HDM/DAM is generally recommended for those considered "treatment-refractory"— that is, those who have previous experience with oral MOUD but did not benefit from treatment. In turn, injectable HDM/DAM has previously, and in some settings arguably still is, encoded from a medical and policy perspective as a "last resort" treatment (Fischer, et al., 2007), with a strong emphasis on "extreme cases" (Guta, Strike, & Gagnon, 2017), typically considered suitable only for a small group of patients (Farrell & Hall, 2015) who fit specific diagnostic criteria.

Patients access this treatment up to three times per day (depending on the service provider) at specific dispensing locations (e.g. dedicated clinics) and are monitored by on-site trained health care providers, namely nursing staff (CRISM, 2019b). Patients can receive up to 3 daily doses of HDM (max 200 mg/dose) or DAM (max 400 mg/dose) in syringes (maximum of 500 mg HDM or 1000 mg DAM per day) (CRISM, 2019a). Injections are primarily self-administered, but can also be administered by health care providers by intra-muscular injections. Thus, this treatment has be constructed as a high intensity model providing access to pharmaceutical grade opioids in a medicalized addiction treatment setting that involves the routine monitoring and surveillance of patients.

4.0 Methods

This is a qualitative research study that is being implemented alongside an observational prospective study of injectable HDM and DAM. Together, these studies aim to examine the implementation and effectiveness of this treatment, and how it is influenced by social-structural forces. Participant interviews have been conducted from May 2018 to September 2019 to explore the implementation of injectable HDM or DAM in Vancouver. This is a longitudinal study, in which participants are interviewed once per year. Ethnographic fieldwork was conducted primarily between May 2018 and September 2019. This paper draws on the analysis of the baseline qualitative interviews with 52 program participants and ethnographic fieldwork.

Participants were recruited into the study from four service provider programs in Vancouver's Downtown Eastside neighbourhood including: (1) an integrated program located in a harm reduction facility containing an overdose prevention site (n=20), operated by a non-profit (Olding, et al., 2020), (2) a pharmacy-based program (n=13); (3) a health authority-operated program operating in a speciality care clinic with an in-house pharmacy (n=6); and; (4) the Crosstown Clinic (n=13), the site of the a previous RCT (Oviedo-Joekes, et al., 2016). Participants were recruited either through the observational study cohort, by study staff during site visits or were referred by clinic staff. An effort was made to recruit participants newly initiated to treatment in order to follow patient trajectories and

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experiences longitudinally to understand how these evolved over time and overcome potential recall bias. However, there were challenges in exclusively recruiting newly-initiated participants because of program dynamics (e.g. Crosstown clinic had limited capacity to enroll new patients), as a result, participants length of treatment engagement varied (2 days to 5 years).

Most participants were interviewed at a storefront research office, and some were interviewed in private offices at clinical sites or in a private room near the clinical space. Interviews were either conducted either solely by the lead author (SM), or were co-led by a peer researcher (e.g. person with lived experience with drug use) or by a research assistant. Ethnographic fieldwork was conducted in and outside of one clinical space, and one-on-one with three research participants. In this clinical space, time was generally spent in the clinic waiting area or adjacent to the nurses' station. One-on-one fieldwork involved spending time with participants in public areas in the community where the participant felt comfortable in (e.g. park). In these encounters the researcher accompanied the participant on a walk to public places important to their lives (e.g. outside of their housing, the clinic they go to, the community space they attend for meals).

An interview guide was used that included questions and probes on treatment experiences, more broadly, and specific questions focused on participants' experiences initiating injectable HDM/DAM treatment (e.g. Can you tell be about when you first started the injectable opioid agonist treatment program?). The interview guide also included questions and probes intended to facilitate discussion of the impacts of structural vulnerabilities (e.g. housing vulnerability, poverty) on treatment experiences. Interviews were semi-structured in nature, and lasted 45–60 minutes. The interviews were audio-recorded and each participant received a $30 CAD cash honorarium after their interview and after one-on-one fieldwork. Approximately 50 hours of ethnographic fieldwork was conducted, and detailed fieldnotes were typed up after each session.

Audio recordings were transcribed verbatim. Transcripts and ethnographic fieldnotes were then imported into a qualitative data analysis software program for analysis. A collaborative approach was taken with data analysis, and the research team co-developed the initial coding framework. This initial framework focused mainly on descriptive themes (e.g. initial perception of the program, goals on the program). Data was then analyzed again with attention to how specific motivations and experiences were shaped by structural vulnerability. This involved a process of constantly considering participants' treatment histories alongside their social and structural context. It also involved an iterative consideration of how participant experiences were shaped by the larger social and political environment of treatment delivery. To aid this process a detailed review of national injectable HDM/DAM clinical guidelines (CRISM, 2019a) was undertaken.

Preliminary findings were presented to a community advisory board comprised of patient representatives from each of the treatment program's clinical models, in order to strengthen the validity of the findings. Participants were assigned pseudonyms using an online name generator for the purposes of this manuscript. Ethical approval was obtained from the

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Providence Health Care / University of British Columbia Research Ethics Board [# H17–00557].

5.0 Themes: Motivations for Treatment Initiation

These themes are organized with attention to how structural vulnerability shapes participants' motivations to access injectable HDM/DAM. It was uncommon for participants to report a single motivation to initiate treatment. Most participants had multiple reasons for initiating injectable HDM/DAM and this is reflected in the results. Participants' demographic characteristics are outlined in Table 1. The majority (69%) of participants identified as men and 31% as women. Nearly 60% of people interviewed identified as white and 40% identified as Indigenous.

5.1 Previous experiences and perceptions of drug treatment

In articulating the dynamics of why they felt HDM/DAM might meet their treatment needs, some participants would foreground their experiences and perceptions of other drug treatments. Participants reported accessing a variety of medications and/or behavioural treatment options in the last 5 years. Participants reported accessing the following oral opioid treatments: methadone/Methadose (81%), slow-release oral morphine (61%), and buprenorphine/naloxone (35%). 'Justin' a 37-year-old white man explains his previous experience with slow-release oral morphine:

> Because I thought for one thing if I could stop orally taking the opiates, right. Like that's the other thing, right. They make you feel nauseous. They make you… they upset your stomach, right. So, when you don't take them orally, when you muscle them, you don't get that, right. You don't get that side effect. That stops that feeling, that nauseous feeling. So instead of feeling sick, you feel good, right. So not a big…it's fairly easy decision, right, for you to make.

In this quote the participant describes a negative side effect and that this side effect might not be felt with an injectable option. When describing treatment initiation other participants would similarly articulate ways in which oral treatments did not meet their needs, and why injectable HDM/DAM might be able to address them. As described by 'Amanda' a 38-year-old white woman:

> I was using on top of my methadone anyway and it wasn't really working for me obviously or else I wouldn't have been using on top of it, so that was my reason for switching.

This participant highlighted how she continued to use illicit opioids while accessing methadone and felt that HDM might be better suited to help her reduce illicit opioid use. Participants described personal experience with and perceptions of the ineffectiveness of oral opioid treatments including; side effects (e.g. constipation, tooth decay, lethargy), inability to sufficiently address withdrawal symptoms, and/or inability to adequately manage pain. As described by 'Greg', a 57-year-old Indigenous man, in describing their initial perceptions of the program:

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> Well, just that you could get good drugs other than methadone and stuff, right. I've never known anybody on methadone that wasn't chipping on other drugs, right, you know. Like nobody's happy on it seems to me, right. Like I said, times I've done it, you know, I've been dope sick or something so you buy somebody's methadone and hey, I'm all chit-chatty and high on it, right, so what do I know, right.

In this quote, the participant perceived that that this medication would better address their needs, in comparison to methadone. While this participant had not been prescribed methadone, they had obtained it illicitly and while it alleviated their dope sickness, they still felt it would not work for them because they observed it did not help other people. Other drug treatments (e.g. recovery houses, detox) were not as readily discussed in relation to HDM/DAM initiation. However, participants did have experience with these treatments, and reported accessing the following: recovery house (29%), detoxification services (31%), residential drug treatment (19%), individual counselling (35%), and support groups (23%). Further during ethnographic fieldwork at one clinic, one participant hurriedly arrived for their second titration dose and described to peer staff how they had not just arrived from detox but had "escaped from there". Suggesting that other types of treatment may also play a role in structuring treatment initiation, and the perceived effectiveness of this treatment.

5.2 Addressing Physical Risks: Overdose, Dope-sickness, and Chronic Pain

Within the context of a heavily fentanyl-adulterated illicit opioid supply, participants were driven to access an unadulterated supply of opioids to reduce their overdose risk. In the context of this adulterated supply, 'Tim', a 51-year-old Indigenous man described:

> Yes, I wanted daily control and I didn't want to die off the street … the fentanyl stuff, because at that point I had already gone down like four or five times with ODs. So, I wanted to get on something regularly, so I wouldn't die.

Poignantly, 'Tim' articulates how he wanted to access HDM/DAM in reduce his overdose risk and indexes a desire for control over his life and fear of overdose death as a motivation to enroll in treatment. Later in the interview he also described how his frequent overdose experiences made him eligible for this treatment. 'Sarah', a 32-year-old Indigenous woman similarly described how HDM/DAM was a better option for her in comparison to a heavily adulterated illicit opioid supply:

> It is better than fentanyl and it is managed better compared to using fentanyl, because fentanyl is like Russian roulette right; you don't know, the next shot you could die right.

This participant described the inconsistency of illicit fentanyl, and described how it posed a threat to their life. Participants described how they were constrained in their ability to manage their overdose risk given the pervasiveness of the adulterated drug supply. This was also expressed by "Frank" a 52-year-old Indigenous man, who discussed his perception of the program prior to enrolling:

> Just basically that it was for people who are using every day and don't really see much in the way of a solution, and I didn't, not that quickly, and being where we

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> were, everything being full of fentanyl, I can't, I just was, and having the OD, it seemed like the only solution.

In this quote the participant highlights how an adulterated drug supply and their experience having an overdose framed their perception of injectable HDM/DAM as being their only solution. 'Kimberly', a 51-year-old Indigenous woman, shared her initial motivations for enrolling in this treatment program:

> It was so risky for me to be out there using street drugs … Just like two weeks ago my friend and neighbour next door OD'd, right, and that was my son's girlfriend, right, he had been going with her for a year and he's just so sad right now and it's totally awful.

While this participant had not personally experienced an overdose in the year prior to treatment, they considered themselves at-risk because of the loss of people in their community. Other participants similarly articulated a motivation to join this treatment because of the impact of the overdose crisis on the wider community, including the loss of family and friends. Some participants would often situate their personal overdose risk within the context of the overdose crisis more broadly, highlighting how the increase in overdose deaths in their community influenced their decision to access treatment. During fieldwork participants in the clinic would sometimes discuss the pervasiveness of illicit drug adulteration, and shared information about people in the community who had died as a result of an overdose. Furthermore, multiple drug warnings were often observed to be posted at clinics, indicating particularly toxic drug adulterations circulating in the local drug scene. These observations further highlight the pervasiveness of the ongoing crisis in community as an important contextual factor in treatment initiation.

Opioid withdrawal or dope-sickness, also presented an immediate threat to physical well-being that participants sought to address. 'Greg' a 57-year-old Indigenous man, described his initial experiences in accessing the program and why he felt he met the eligibility criteria:

> They just knew I was a junkie, right, you know, like I think you could tell I wasn't eating back then or nothing, right. I was on that program probably two, three weeks I put on 20 pounds, right. You know, before that, dope sickness cures hunger, you know, like think you to go get in a food lineup when you're dope sick no fucking way, right. Food's secondary.

This participant described how prior to receiving HDM/DAM treatment, alleviating dope-sickness through illicit drug use was their primary concern and would go without food in order to engage in activities necessary to avoid withdrawal onset. The intensity of the physical threat of dope-sickness similarly shaped other participants treatment initiation experiences. Participants described withdrawal onset as being extremely painful which included body aches, profuse perspiration, and an inability to sleep for extended periods of time. Some participants described opioid withdrawal as life-threatening, and participants expressed an intense desire to alleviate it.

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Lastly, a subsample of participants reported accessing the program to address untreated or undertreated chronic pain as an immediate health need. Participants reported chronic pain stemming from motor vehicle accidents, unsafe work conditions, and physical assault. Participants described their chronic pain as debilitating and that it significantly impacted their well-being. Some participants had previous experiences in having either access to or being prescribed opioids (e.g. Oxycodone) and then being cut-off, following changes to prescribing guidelines for opioids and transitioning to illicit opioid markets to manage their pain. 'Robert', a 66-year-old white man, described his initial perception:

> They explained the program, and I guess the doctor knew why I was here. And the program is basically to help people who are trying to kick drugs. And this is clearly not the case with me. I'm here because I want more drugs. Yeah, it's strictly for pain management. I have no wish to stop using opioids until the day I die, because that's what… it's the one substance that I found in 33 years that keeps me functioning. It allows me to have a life.

In this quote, 'Robert' explained the ways in which he felt his treatment goals were different than other patients and centered his pain needs as the primary motivation to initiate treatment. This participant highlighted how his perception of injectable HDM/DAM was incongruent with the construction of drug treatment as a way to reduce opioid use. In articulating their pain needs, this subsample would often emphasize differences between themselves and others to contrast their current situation and reinforce their need to access opioids for their pain in the context of medical systems that have shifted away from opioid-prescribing.

5.3 Alignment of Injectable HDM/DAM with Opioid Use Experiences

The motivation to address immediate risks intersected with how participants viewed HDM/DAM as an effective treatment option that aligned with their opioid use experiences. Specifically, participants described a motivation to access this treatment for both the medication provided and/or the ability to inject it. 'Matthew' a 37-year-old white man described what he had heard about the program:

> That it's changed a lot of people's lives, that it's really…that they don't have to chase the drug anymore, because they can…they get what they need from the doctor's, and it's safer, it's clean, and you know what you're getting every time.

This participant describes his motivation to access this program as being rooted in the perception that the injectable HDM would provide him a safe and reliable opioid. Participants emphasized that they were interested in this program because it offered a pharmaceutical opioid that was safer and/or that it provided a physical feeling that they wanted, thereby allowing grater agency in relation to their treatment experience in comparison to oral MOUD.

Many participants also explained that their initial perspective of the program was that it provided "free dope"- unadulterated opioids that provide a desired drug effects. In the context of economic precarity, and the risks associated with illicit opioid use under drug criminalization, accessing an opioid without the need to expend significant precarious labour

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to generate income was a strong motivating factor for participants (discussed further in theme 5.4). ‘John’, a 41-year-old Indigenous man, described his initial experience accessing the program:

> I can’t tell you, because I was sick [withdrawal]. I don’t remember anything, except for being sick. I had just got arrested. If I had had this cup and I put it underneath my pits like this, I would have filled it up in five minutes. That’s how bad I was sweating. That’s how sick I was. Then she [Street Nurse] said, “Okay, we’re going to get you on there.” I guess the way that it was sort of introduced to me, she said, “Do you want to go on methadone or Suboxone (buprenorphine/naloxone)?” It’s like, “No, I don’t want to be on Suboxone.” And I honestly said it was because I still want to have that feeling of getting high. And she says, “Yeah, I know. You still want that feeling of getting high.” So, they offered this. And, you know, to begin with I didn’t know exactly how they were going to administer it to me. I didn’t know that I was actually able to take the rig myself and inject myself. And when I found that out, it was…made things a lot more simpler for me.

In this description this treatment was explained to him as something that would allow him to achieve a physical experience he wanted, and agency to administer his own medication. Importantly, the intensity of dope sickness stemming from an arrest, framed ‘John’s’ initiation experience, as well as his previous experiences accessing oral medications that did not meet his needs.

Similar to ‘John’, other participants were also interested injection (intravenously or intramuscularly) as a core component of the treatment. ‘David’, a 46-year-old white man, explained his initial perception of the program:

> It was kind of odd. [Laughs] It just seemed a little surreal or whatever. I don’t know if that’s the right word, but it seemed … I was kind of blown away by it because it was, you don’t usually get the … Well, injection use is usually a bad thing from the public’s side. So, it was hard to… well, it’s not hard to grasp but it was just a little… I think I was pulling back a little bit by it. It was different to me, different to feel things like that. And I’d say this is too good to be true.

Here the participant described his uncertainty about the program given the prevailing stigma associated with injection drug use. Other participants similarly reflected on how the ability to inject HDM/DAM could potentially address an important behavioural or mental component of their drug use and that an injectable program challenged the social stigma associated with injection drug use. In turn, the combination of the medication provided and ability to inject was a motivating factor to initiate this treatment.

The subsample of participants with chronic pain, accessed this treatment option to address their pain needs. ‘Hugh’, a 37-year-old white man who had a chronic back pain from a motor-vehicle accident, explained:

> Yeah. And the Kadian (slow-release oral morphine) from [clinic name] that they were giving me wasn’t even cutting it. I was up to 1000 milligrams [a day] and I could barely even feel it take any pain away at all. And I thought, wow, this pain is

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> through the roof, and you know, I want to see if I can get on that program. At least they have stronger medication there, right?

Here ‘Hugh’ explained how this treatment option as it offered a stronger alternative to previous pain medications he had tried. Participants with chronic pain also described ways in which they felt this treatment could and could not meet their needs.’Carl’ a 63-year-old white man described his initial perception of the program:

> I mean it was, the pain was gone and it was like hey the relief and I was happy to get the relief. I mean don’t get me wrong I mean hey, it works, I mean it’s like if you can’t get the best you go to the second best you can get.

In this quote ‘Carl’ describes how the program is their second-best option, in comparison to the prescription opioids they had accessed prior (Morphine). While some participants were somewhat satisfied with this treatment in addressing their pain needs, others expressed frustration, but felt that this was the only option available to them. ‘Kathryn’ a 57-year-old white woman describes her experience accessing medications for her pain:

> When I’m given the proper medication, my life falls right into place. I get up in the morning and put my makeup on, I dress nice, I could go out and look for a job or I could go out shopping, or I could actually work. But when I’m in pain, I’m walking around in the same clothes for three or four days. I don’t have any makeup on. My house is a wreck. But the medication makes such a difference. But it’s like when you tell that to the doctor, it’s like they think, “Well, you’re just an addict and you’re seeking the medication.” Well, yes, in a way, because it makes me better. But I’m not just seeking it for the high. I’m seeking it because my whole life improves.

‘Kathryn’ describes how when her pain needs are met, her daily life improves. She describes how she does not access injectable HDM to provide feelings of euphoria or pleasure, but to address her pain, and improve her life. In this quote the participant engages in strategies to defend herself against stigmatizing “drug seeking” narratives in order to emphasize her pain needs. Some participants similarly articulated access to injectable HDM/DAM as constrained choice, providing them with agency to address their pain needs, but within the confines of a restrictive treatment program.

5.4 Make changes to daily life

In the context of continued economic marginalization, and drug criminalization participants described an interest in starting injectable HDM/DAM in order to reduce their need to orient their lives around accessing illicit opioids. Many participants viewed this treatment as a pathway to address the ongoing structural vulnerability that shaped their lives, notably economic precarity, which intersected with their food insecurity, housing vulnerability and personal relationships. Most participants reported multiple sources of income including: social assistance (90%), drug selling (33%), recycling (binning) (31%), vending (re-selling goods on the street or at markets) (27%), part-time/casual labour (e.g. peer worker at overdose prevention site) (25%), panhandling (23%), and theft (boosting) (23%).

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Participants reported that these income sources were ineffective at generating suitable money to sustain their needs (food, shelter, clothing) and manage their opioid use. ‘Mark’, a 54-year-old white man, describes his initial motivation to initiate treatment:

> It provides, I don’t know, like something of a high or something like that. Like I can walk around with money in my pocket without spending it on rock [crack cocaine] when I do a fix. That’s what it all boils down to really. This, being on this, will allow me to function like a normal human being because it will allow me to walk around with money in my pocket instead of just burning right through it and then being flat broke, not having money for shoes or lunch or bus fare or what have you. I can’t go on like that. And this is the only way, honestly, realistically, is the only way that I can do that. I have to be high one way or another. I’m a drug addict. I’m 54. I’ve been doing hard drugs since I was like 17. I’m not going to straighten out, you know.

In this quote, ‘Mark’ describes how he was interested in the program not only because of how the medication feels, but as a potential to free up money spent on drugs to cover necessities such as clothing and transportation. He also articulates that his broader treatment goals do not include a desire to reduce his opioid use, but rather a desire to address structural vulnerabilities experienced in his daily life. Participants who were accessing the newly implemented HDM programs often referenced positive narratives relayed in their community from patients previously or currently engaged in this type of treatment. Participants spoke about how they heard that these programs could “change people’s lives” and how things were “going really good” for people on the program because they no longer needed to orient their lives around engagement with the illicit drug market. This experience was echoed by ‘Amanda’, a 38-year-old white woman, when asked about their motivation to initiate treatment:

> I was in to see my doctor and I said I wish there was a way I could still get high without having to, you know what I mean, without having to do the daily grind. She was like well we have the new program, iOAT [injectable opioid agonist treatment] program, blah, blah, blah. It sounded like a much better alternative for me.

In this quote the participant describes how they still want the feeling of opioids but wants to disengage from the “daily grind” associated with acquiring illicit opioids. Participants were also motivated to reduce their need to engage in high risk or criminalized income generation activities (e.g., shop-lifting, selling drugs, theft, sex work) necessary to support illicit opioid use. Participants described how they wanted to move away from the associated risks of engaging these activities. These risks included physical assault, police interactions, and associated adverse mental and physical impacts. For example, ‘Amy’ a 46-year-old white woman explained why she accessed this treatment:

> I wouldn’t have to pay for it [opioids], because you know, that was a huge […] Having to hustle and you know, because I carried us [her and her partner] working the streets, but I was sick of that and, you know, I was scared and tired and he tried to… he sucked carrying [supporting] us

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'Amy' describes how she wanted to access this program to disengage from sex work necessary to obtain illicit opioids that she needed. She notes that she was tired, scared, and her partner did not contribute to shared income generation activities. Several participants, the majority women, similarly described how their personal relationships intersected with their motivation to initiate treatment. This is described by 'Stephanie', a 33-year-old white woman:

> I did it because being, at the time being with my… being with my ex-spouse, his habit went down so then I was… I was still using the amount that I was using and having to use in front of him all the time and it just, it caused more friction between the two of us and he basically gave me an option. It was either I put the dope down and do what he was doing and/or basically our relationship was going to be over and I got sick of… I got sick of doing the… sleeping outside and doing the hustle every night to get money to get dope. It was getting exhausting and I had a few bad experiences doing the type of work I was doing. I had some bad experiences and stuff that shouldn't happen to people, and it was getting pretty scary having to still go out there every night and make money and continue using.

Here the participant describes the relationship with her partner who had discontinued opioid use while she did not, resulting in conflict and constraining agency in treatment initiation. Four participants also reported accessing this program with a partner in order to make changes to their daily lives together, and three participants reported accessing this program in order to achieve stability, and reconnect with their children. 'Stephanie' also discussed ways in which her income generation activities (sex work and drug dealing), a lack of housing, and experience of violence necessitated treatment access.

5.5 Connection to Broader Goals Related to Opioid Use

While all participants wanted to address illicit drug use, some participants described longer term drug use goals. This was described by 'Michelle' a 47-year-old Indigenous woman when asked why they joined this treatment:

> The factor of, you know, of how… of all people and if you were to meet my husband, everybody would agree with you… would agree with me that if he can do it, anybody can. My goals is to be completely off street drugs.

'Michelle' and other participants did not describe opioid abstinence as a goal, but rather described a desire to gain agency in managing their illicit opioid use and access to a consistent and safer supply of opioids. On the other hand, a group of participants did seek out this treatment to reduce all drug use, highlighting contrasting narratives between participants in terms of recovery and harm reduction-oriented perspectives of treatment. Some participants described that they wanted to eventually disengage from injectable HDM/DAM treatment. This goal was articulated by 'Nick' a 31-year-old white man:

> To eventually quit, but I…I wasn't going to rush into anything, I just wanted to stabilize and then start to maybe, um, you know, taper.

In this quote the participant describes how they saw this treatment as a way to find stability and then focus on eventually tapering their dose and disengaging from treatment. This aligns

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with the construction treatment as part of a continuum of care, whereby patients can progress across this continuum in accordance with treatment intensity. However, participants in this study did not necessarily articulate that they wanted to transition to less intense treatment models, such as oral MOUD. Other participants similarly discussed how they had to take it slow, or take it "day-by-day" and eventually move towards reducing their HDM/DAM dose. This is described by 'Amy', a 46-year-old white woman regarding her perception of the program:

> I was hesitant, really hesitant. I don't know why. I can't remember the reasons why. But I knew that we got on it to get off of it. Like we didn't want to be on this forever. That was the whole goal and that's what I thought our goal was, my husband and I.

This participant described her hesitancy with the program and how she wanted to eventually leave treatment. Other participants similarly articulated initial hesitancy in their ability to leave this treatment, linked to the potential for dopesickness associated with treatment disengagement. Importantly these reflections were contextualized by previous unmanaged withdrawal experiences associated with oral MOUD, namely methadone/Methadose.

6.0 Discussion

Participants' descriptions of their motivations to initiate HDM/DAM highlight how structural vulnerabilities shape experiences initiating injectable HDM/DAM. Participants' perceptions and experiences of ineffective treatments (e.g. methadone) structured their initial perceptions of this treatment. Structural vulnerabilities (e.g. fentanyl-adulterated drug supply, economic precarity) influenced participants' motivations to address immediate physical risks and influenced perceptions of this treatment's ability to align with opioid use experiences. The results highlight how similar structural vulnerabilities that drive immediate physical risks, are also evidenced in participants' motivations to make changes to their daily lives and address broader opioid use goals.

In this study previous ineffective experiences with oral MOUD and other drug treatment options contextualized participants' treatment initiation. In Canada, despite an increase in supportive programming aimed at improving access (e.g. emergency department-initiated buprenorphine/naloxone and methadone) (Hu, Snider-Adler, Nijmeh, & Pyle, 2019), and increased treatment capacity in many regions (Eibl, Morin, Leinonen, & Marsh, 2017), gaps still exist in terms of retention and engagement (Nosyk, Geller, et al., 2010; Nosyk, Marsh, Sun, Schechter, & Anis, 2010). Similar to previous studies, the perceived benefits of the injectable program were motivating factors for engagement (Tompkins, et al., 2019). However, specific to this study participants articulated ways in which their perception of this treatment aligned with their opioid use experiences, and afforded them a sense of agency in terms of the ability to self-inject and the preferred physical effects of the medication.

Consistent with other studies that have found that past overdose experiences are a factor implicated in treatment enrollment (Kerr, et al., 2005), participants in this study similarly reported past overdose experiences and a desire to initiate treatment to mitigate risk. Importantly these findings are contextualized within an opioid crisis driven by pervasive

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illicit fentanyl adulteration of the local drug supply fostering an environment of increased risk. Similar to studies of oral MOUD, these findings highlight the importance of considering how a shifting local illicit drug supply can interact with other vulnerabilities (e.g., challenges in managing overdose risks and opioid use due to economic precarity) to influence patient beliefs around treatment that can ultimately impact ongoing treatment engagement (Silverstein, Daniulaityte, Martins, Miller, & Carlson, 2019). Participants in this study experienced and perceived themselves to be at a high risk of overdose, especially given their exposure to overdose risk environments, which contributed to their motivation to access this high intensity treatment model.

Participants were constrained in their ability to make money and were often reliant on criminalized income generation activities (e.g. theft, drug selling) or on other precarious income generation activities (e.g. binning). Congruent with previous studies, participants expressed a desire to disengage from these activities (Oviedo-Joekes, et al., 2014; Stöver, 2011), and reduce the financial burden of illicit drug use (Booth, et al., 2003). In this study, poverty, and intersecting structural factors such as drug criminalization and an adulterated illicit opioid supply, significantly limited peoples' ability to access safe opioids, and abate dopesickness and overdose. Participants linked their desire to address these immediate physical risks, to broader social factors that constrained their daily life and ability to manage their drug use on their own terms. Therefore, participants described a motivation to access this treatment given their perception that it would provide a safe opioid without the need to expend significant precarious labour to access it. Relational aspects of treatment engagement, such as entering the program with a partner or the motivation to reconnect with children were primarily articulated by women. The role of personal relationships and treatment engagement for women aligns with previous research (Palis, et al., 2017), and suggests the need for additional consideration of how injectable HDM/DAM treatment might be experienced differently by women.

A subset of participants reported a motivation to access this treatment given their desire to manage comorbid pain. Pain amongst people who receive oral MOUD is common (Dhingra, et al., 2013; Dunn, Finan, Tompkins, Fingerhood, & Strain, 2015; Tsui, et al., 2016; Voon, et al., 2015) and people who use drugs report experiencing inadequate pain management attributable to stigma and regulatory requirements (Berg, Arnsten, Sacajiu, & Karasz, 2009; Ivsins & Yake, 2020). In this study participants experiences of pain unfolded against backdrop of structural impediments, including restrictive opioid prescribing guidelines (Busse, et al., 2017). Addressing pain through opioid treatment can be present significant challenges as it is difficult to balance adequate pain relief and manage opioid cravings, while also addressing increased opioid dependence, overdose risk, withdrawal, misuse, diversion (Ling, Mooney, & Hillhouse, 2011; Voon, et al., 2015), as well as risk of a poorly understood phenomena, opioid hyperalgesia (CRISM, 2019a). However, a consideration of the complexities of managing pain and opioid dependence is particularly important given research findings that highlight how methadone patients with higher pain severity are more likely to selfmanage their pain through illicit opioid use (Voon, et al., 2015), which in the context of an adulterated illicit supply, can be life-threatening. This study highlights the importance of initial screening for pain needs, and to incorporate pain management supports and services for people with pain accessing these programs. Furthermore, participants with

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chronic pain shared important perspectives on how they conceptualized their opioid use as a way to manage pain and some positioned their needs as incongruent with how this treatment has been constructed. These findings point to the need for a further consideration of the diversity and complexity how patient's accessing treatment understand their opioid use within the context of biomedical and prohibitionist discourse that shape treatment delivery and diagnostic criteria (Boyd, Ivsins, & Murray, 2020).

Lastly, our findings suggest that understanding patients' social context and their initial treatment motivations and goals can help to inform the continued development of injectable opioid treatment programs, specifically as it relates to implementing some of the core tenets of patient centered care in program design. Principles of patient-centered care include the integration of a bio-psycho-social approach, an individual focus on patients' needs, goals and preferences and shared power and responsibility between patient and providers (McNeil, Kerr, Pauly, Wood, & Small, 2016; Mead & Bower, 2000; Morgan & Yoder, 2012; Scholl, Zill, Härter, & Dirmaier, 2014). Therefore, understanding why and how people enrolled in treatment is important in aligning treatment with patients' goals, an essential element of operationalizing patient-centered care. As described, participants articulated a wide variety of reasons for initiating treatment, which included not only a desire to manage their illicit opioid use, a frequent measure of treatment effectiveness, but also reasons such as wanting to access a safer opioid that they could inject and to manage their pain. Overall this study emphasizes the importance of identifying and integrating measures related to patient-centered outcomes in substance use disorder treatment and research (Marchand, et al., 2019)

This study has limitations. The experiences of women and gender diverse people are under-represented in the current sample. This is in part attributable to an under-representation of these populations in local treatment programs and despite efforts to over-sample these populations for this study. The study enrolled a subset of individuals from four injectable HDM/DAM programs, and therefore may not be reflective of other program participants. Lastly, the study is specific to Vancouver BC, therefore certain contextual considerations (e.g. adulterated drug supply) are not necessarily applicable to other settings.

These findings highlight how structural vulnerabilities intersect to shape participants initial perceptions of injectable HDM/DAM and their motivations to access this type of treatment. Some of these vulnerabilities included, a fentanyl-adulterated drug supply, drug criminalization, and economic precarity linked to food and housing insecurity. A consideration of these factors is important in the ongoing implementation of these programs to better understand patient needs and preferences in treatment delivery.

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Research Highlights:

- Experience and perception of ineffective alternative treatments shaped initiation.
- Treatment initiation was contextualized by the overdose crisis.
- Motivation to address physical risks (overdose, dope sickness and chronic pain).
- Injectible HDM/DAM aligned with opioid use experiences and needs.
- Desire to make changes to daily life and address broader opioid use goals.

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Table 1.

Participant Characteristics

Participant characteristics	n (%) N=52
Age	
Mean	45 years
Range	22–66 years
Gender	
Men	36 (69%)
Women	16 (31%)
Transgender, two-spirit, or non-binary	0 (0%)
Ethnicity	
White	30 (58%)
Indigenous	21 (40%)
Did not wish to disclose	1 (2%)
Health Conditions	
Hepatitis C	27 (52 %)
Mental Health Condition	27 (52%)
Other (e.g. Kidney Failure, Pneumonia, Asthma)	13 (25%)
Chronic Obstructive Pulmonary Disease	6 (11%)
HIV/AIDS	3 (6%)
Diabetes	2 (4%)
Housing	
Apartment	10 (19%)
Single Room Occupancy Hotel	24 (46%)
Shelter	7 (14%)
Unsheltered/Outside	8 (15%)
Friends' Place	2 (4%)
Other-Detoxification Service	1 (2%)
Income Generation Activities (last 30 days):	
Social Assistance	47 (90%)
Part-time em ployment, casual work or other stipends (e.g. peer worker at overdose prevention site, grocery shop clerk)	13 (25%)
Drug Selling	17 (33%)
Recycling	16 (31%)
Vending (e.g. selling items on the street)	14 (27%)
Panhandling	12 (23%)
Boosting (e.g. Shoplifting, theft)	12 (23%)
Other (e.g. family support, selling art)	8 (15%)
Sex Work	4 (8%)